

9 October 1967

REGISTERED

Amendment No. 01

Gentlemen:

Reference is made to the subject contract dated 13 May 1967 and [redacted] letter No. T3911-5134, dated 21 July 1967.

By mutual agreement the contract is amended as follows:

1. Page 3, Step II, DELIVERABLE ITEMS: Add the following sentence.

The deliverable items under this Step II are subject to the PROPRIETARY DATA clause on page 5 of this contract."

2. Page 3, Step II ACCEPTANCE: The "30 days in the second paragraph of this clause shall be deleted and 10 days" shall be substituted therefor.

3. The SHARING ARRANGEMENT clause under MISCELLANEOUS PROVISIONS: on page 4 & 5 is deleted in its entirety and the following is substituted therefor:

This material is...
within the meaning...
or revelation of which in any...
United States...
information...
and...
and...

The Contract shall be performed using three separate Fixed Price steps with a cost sharing arrangement to be applied at Contract completion if total Contract Cost is less than [REDACTED]

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Total Government Cost Obligation
Estimated Contractor's Cost

25X

If total costs at completion are less than

25X

the cost shall be shared using the following ratio:

Description

Government's share of cost
Contractor's share of cost

25X

A profit of 15% shall be added to the Government's share of cost. The Government's total funding shall not exceed the following dollar limitation.

LEGS

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[REDACTED] costs which are not recovered under this Contract may be amortized over future sales. It is understood and agreed that in no event shall the Contractor recover from all Government Contracts developmental costs in excess of those expended.

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4. Delete the second sentence of the STATEMENT OF COSTS clause on page 5.

5. Delete the second paragraph of the PROGRESS PAYMENTS clause on page 5 and substitute the following:

"Further, upon satisfactory completion and acceptance of each Step, the Contractor may, at that time, invoice and be paid for the full amount of the Government's Cost share, including the withholding and profit as outlined in the above SHARING ARRANGEMENT clause."

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6. The Contract shall include the following paragraph APPLICABLE DEVELOPMENT COST:

Certain Viewer developmental costs have been incurred by the Contractor and portions of these are common to the development of this program as follows:

<u>Sales Order No.</u>	<u>Description</u>
2807-0001 → in non-recurring	Zoom lens analysis
2807-0002	Film transport design
2807-0003	Electrical modules and controls
2807-0005	Structure and Enclosure
2833-0000 new	Analytical Effort

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relat portions to require

7. The WARRANTY clause on page 5 is deleted in its entirety and the following substituted therefor:

(a) [] warrants that at the time of delivery the items delivered hereunder will be free from defect in material and workmanship and will substantially conform to applicable specifications and drawings as set forth in the Contract.

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ORIGINAL ANT.
OF ONLY
ALLOWED

substantial
complete conformance

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(b) [] liability and Buyer's remedy under this warranty are limited to the repair or replacement, at [] election, of defective or nonconforming items or parts thereof which were defective at the time of delivery (plus the payment of reasonable packing and transportation charges within the continental limits of the United States if items are returned in accordance with [] written shipping instructions) as to which Buyer has notified [] in writing within a period of ninety (90) days after such items have been delivered to, and accepted by, Buyer.

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establishment of evidence of defect at delivery

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WHAT ABOUT RETURN OF PARTS
HENNINGSEN P120
(1959) MT U.S.C.

(c) Unless items are previously accepted by Buyer, for the purposes of this warranty clause, items delivered to Buyer in all events shall be considered to have been accepted by Buyer thirty (30) days after delivery, installation and final acceptance testing of the viewer at the Sponsor's facility.

30 days from delivery to test?

Does this mean auto acceptance after what?

30 days after what?

(d) In all cases, upon [] repair or replacement of any defective or nonconforming items or parts thereof after initial delivery to Buyer, the original warranty period as set forth above shall be extended only with respect to the particular part of the unit which is found to be defective or nonconforming for a period of time measured from the date [] receives Buyer's written notification of the defect or nonconformance until [] re-delivery of the repaired or replaced item or part thereof to Buyer.

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PRACTICAL PROBLEM

(e) [] warranty does not extend to any item or part thereof which has been subject to misuse, neglect or accident, nor does it extend to any item or part thereof which has been repaired or altered by any party or parties other than []

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(1) THE FOREGOING WARRANTY IS EXCLUSIVE AND IS GIVEN AND ACCEPTED IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE REMEDIES OR BUYER SHALL BE LIMITED TO THOSE PROVIDED HEREIN. IN NO EVENT WILL [REDACTED] BE LIABLE FOR COLLATERAL OR CONSEQUENTIAL DAMAGES OR FOR ANY OTHER COSTS.

WHY NOT
EXTEND MERCHANTABILITY
TO CONTRACT.

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8. In accordance with Section A, General Provisions, Article 30, paragraph 2 and due to the delicate nature of the deliverable item, the mode of transportation shall be determined solely [REDACTED]

9. For clarity, the Rear Projection Viewer being designed, developed and fabricated by the Contractor under this Contract shall be designated the NOD 110/120. Any reference to the NOD 110 or the NOD 120 in any correspondence, specifications, quotations, working papers, accounts and in the Contract [REDACTED] is hereby mutually determined to be analogous with NOD 110/120.

10. Based on the above changed SHARE ARRANGEMENT clause the Contract is hereby decreased by [REDACTED]

[REDACTED]

All other terms and conditions shall remain the same.

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Please indicate your acceptance of the foregoing by signing this letter and enclosed two copies hereof. Retain one copy for your records and return the signed original and one copy to the undersigned at the earliest practicable date.

Very truly yours,

[Redacted Signature]

Contracting Officer

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[Redacted Box]

BY _____

TITLE _____

FORM 1444 USE PREVIOUS EDITIONS Approved For Release 2005/11/21 : CIA-RDP78B04770A0001900010012-9 RECEIVING REPORT

RDP78B04770A

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TITLE# <u>02157</u>	
<input type="checkbox"/>	PRT-CONTRACT ACTION
<input type="checkbox"/>	CORRESPONDENCE
<input type="checkbox"/>	SECURITY ACTION
<input type="checkbox"/>	MISCELLANEOUS
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<input type="checkbox"/>	DESIGN OBJECTIVES & PROPOSALS, ATTACHED MEMO
<input checked="" type="checkbox"/>	CONTRACT & CONTRACTUAL CORRESPONDENCE
<input type="checkbox"/>	INSPECTION & TRIP REPORTS
<input type="checkbox"/>	PROCESS REPORTS
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COMMENTS:	
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OTHER (SPECIAL PROJECTS)	

ALL PACKAGE PAPERS
 RELATING TO THIS ORDER/CONTRACT
 ORDER/CONTRACT NO.

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ISSUING OFFICE

ITEM NO.

SUPPLIES OR SERVICES

UNIT

QUANTITY
(NO. OF
UNITS)

UNIT
PRICE

AMOUNT

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BILLED

In the event of conflict the TECHNICAL REQUIREMENTS AND PERFORMANCE SPECIFICATIONS shall prevail.

PERIOD OF PERFORMANCE:

The period of performance under this Contract shall be 31 May 1967 through 30 November 1968.

CONTRACT STEPS:

The Contract shall be performed in three separate steps as follows:

STEP I

SCOPE:

The Contractor shall design and analyze the optical system, including the Zoom Projection Lens(s) and Preliminary Design of the condenser/illumination system for the projection lens.

DELIVERABLE ITEMS:

1. Design and analysis data such as lens prescription, ray trace and spot diagram to substantiate the feasibility of fabricating the viewer which will be deliverable under Step III.

All data shall be forwarded directly to:

Post Office Box 8031
 Southwest Station
 Washington, D.C. 20024

DELIVERY SCHEDULE:

Final Data deliverable under Step I shall be submitted on or before 15 September 1967.

ACCEPTANCE:

Acceptance of work performed under Step I shall be contingent upon:

1. Completion of design and analysis work being accomplished.
2. The delivered data satisfying the Contracting Officer's Technical Representative by showing that the Contractor can meet the technical requirements and specifications for the rear viewer which are incorporated in this Contract.

The Contracting Officer's Technical Representative shall accept or reject the data within 30 days after receipt of the last data. It is mutually agreed by the parties hereto that the Contractor shall not proceed with Step II without the prior written authorization of the Contracting Officer.

CONSIDERATION:

Upon satisfactory completion and acceptance of the work under Step I, the Contractor shall be paid an amount not to exceed [redacted] in accordance with the sharing arrangement below.

SPECIAL PROVISION:

If the Contractor determines during the performance of Step I that the project is not feasible, he may stop work at that time, but under such circumstances the Government is not liable for any costs incurred. The Government agrees that under such circumstances the Contractor will not be held liable for procurement cost described in Clause (b) under Article 13, entitled 8-707 DEFAULT (June 1964) of Section 8, Fixed Price Supply Provisions of this Contract.

TOTALS CARRIED FORWARD TO FIRST SHEET

CONTINUATION SHEET

ALL PACKAGES MUST BE OPENED AND INSPECTED

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NO. OF PAGES

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ISSUING OFFICE

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BILLED**STEP II****SCOPE:**

The Contractor shall complete the mechanical design, documentation, and the fabrication, assembly, alignment, and test of the projection/illumination system.

DELIVERABLE ITEMS:

1. A testing procedure shall be submitted to the Contracting Officer's Technical Representative for mutual acceptance prior to the fabrication drawing release.
2. A total system specification and test procedure for Contracting Officer's Technical Representative review and mutual approval.
3. The Contracting Officer's Technical Representative shall review, inspect, test, etc, the drawings, documentation, layouts, procedures, designs, specifications, etc, produced under Step II, in conjunction with data produced under Step I.

Items 1 and 2 above and other data necessary and desirable shall be forwarded to the following address:

Post Office Box 8031
Southwest Station
Washington, D.C. 20024

DELIVERY SCHEDULE:

The total system specification and test procedure and tests shall be accomplished on or before 15 May 1968 and if acceptable by the Contracting Officer's Technical Representative, authorization by the Contracting Officer will be granted to initiate Step III.

ACCEPTANCE:

Acceptance for work performed under Step II is contingent upon:

1. The test procedures as presented to the Contracting Officer's Technical Representative being mutually approved and implemented.
2. Satisfactory performance of the Step II scope of work above, as described in the Contractor's Work Statement which is incorporated herein.

The Contracting Officer's Technical Representative shall accept or reject the results of Step II within 30 days after inspection, review, or receipt of the last data (including but not limited to drawings, documentation, layouts, procedures, designs, specifications) produced under Step II. It is mutually agreed by the parties hereto that the Contractor shall not proceed with Step III without prior written authorization of the Contracting Officer.

CONSIDERATION:

Upon satisfactory completion and acceptance of the work under Step II, the Contractor shall be paid an amount not to exceed

in accordance with the sharing arrangement below.

SPECIAL PROVISION:

If the Contractor determines during the first three months of this Step II that the program is not feasible, he may stop work at such determination, but under such circumstances the Government is not liable for any costs incurred during the performance of Step II. The Government agrees that under such circumstances they would not hold the Contractor liable for the procurement cost described in Clause (b) under Article 13 entitled 8-707 DEFAULT (June 1964) of Section B, Fixed Price Supply Provisions of this Contract.

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ALL PACKAGE PAPERS
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ORDER/CONTRACT NO.

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The Contractor shall complete the design, fabrication, assembly, alignment and test of the remaining viewer components including, but not limited to, film transport, power supplies, structure, enclosure, mirrors and related components and the final assembly, alignment, test and delivery of the completed viewer and manuals and spares.

DELIVERABLE ITEMS:

1. One (1) each Rear Projection Viewer NOD 110.
2. One (1) each Kit of initial spare parts and maintenance materials.
3. Four (4) copies each of operator's instruction book and comprehensive technician's maintenance book.

These items shall all be delivered to an address to be furnished by the Contracting Officer's Technical Representative.

DELIVERY SCHEDULE:

The deliverable items under Step III shall be delivered on or before 30 November 1968.

ACCEPTANCE:

Preliminary tests shall be performed at the Contractor's plant by the Contractor and the Contracting Officer's Technical Representative. Final acceptance testing shall be performed after delivery and installation of the viewer at the Sponsor's facility. Installation shall consist of complete mechanical and electrical check-out and optical alignment. The Sponsor is responsible for all site requirements and preparation.

CONSIDERATION:

Upon satisfactory completion and acceptance of the items deliverable under Step III, the Contractor shall be paid an amount not to exceed [redacted] in accordance with the sharing arrangement below.

MISCELLANEOUS PROVISIONS:SHARING ARRANGEMENT:

The Contract shall be performed on a Fixed Price basis with a sharing arrangement on cost computed separately on each Step. The ratio on each Step shall be as follows:

Description

Government's share of cost
Contractor's share of cost

A profit of 15% shall be added to the Government's share. The Government's total funding obligation shall not exceed the following dollar limitation:

Step

- I.
- II.
- III.

Total Government Cost Obligation:

Estimated Contractor's Cost Contribution:

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Further, if the final cost of any Step herein is such that the Government's share of [] is less than that particular Step's maximum cost allowance as stated above, the Government shall pay the lesser amount based upon the Government's cost share ratio. A profit not to exceed 15% of such lesser cost shall be applied thereto.

STATEMENT OF COSTS:

The Contractor shall present a Certified Statement of Costs following the completion of each Step. The Statement shall provide a share determination in accordance with the above Sharing Arrangement.

PROGRESS PAYMENTS:

Progress Payments are authorized under Step II and Step III in accordance with the attached Provision entitled, "Progress Payments", which is incorporated herein by reference and made a part hereof. In support of each invoice for Progress Payment, and upon completion of the performance of the work under Steps I, II, and III, the Contractor shall deliver to the Contracting Officer, a certified detailed statement of the applicable costs experienced by the Contractor in performing the work under each particular Step.

Further, upon satisfactory completion and acceptance of each Step, the Contractor may invoice and be paid for the full value of the Government's share of the Step, including the withholding and proportionate profit.

ROYALTY FREE LICENSE CLAUSE:

The following clause is incorporated herein by reference and made a part hereof: ASPR 9-107.5(b) Patent Rights (License) (Oct 66).

AUTHORIZATION AND CONSENT:

Under Section B of the Contract Article 14 ASPR 9-102.1 Authorization and Consent is deleted in its entirety and ASPR 9-102.2 Authorization and Consent is substituted therefor.

Based upon the above change (Article 15, ASPR 9-103.1 Patent Indemnity (Sept 64) in Section B of this Contract is deleted in its entirety.

The changes in the above two paragraphs are only applicable to work performed during the Contract period.

WARRANTY:

Notwithstanding inspection and acceptance by the Government of the Rear Projection Viewer, which is deliverable Item No. 1 of Step III under the Contract, or any provision of this Contract concerning the conclusiveness thereof, the Contractor warrants that for a period of 90 days after acceptance at destination by the Contracting Officer's Technical Representative, the Rear Projection Viewer will be free from defects in design, materials and workmanship and will conform with the specifications and all other requirements of this Contract.

GOVERNMENT FACILITIES:

The Contractor is authorized to use, in the performance of this Contract, the Government facilities provided to it under Facilities Contract Nos. []

[] in effect on the date of this Contract, on a rent-free, non-interference basis.

PROPRIETARY DATA:

The parties mutually agree that manufacturing drawings and data are proprietary to [] and are not deliverable items. Deliverable data will be limited to that required for operation and maintenance of the equipment as set forth in the Statement of Work and Technical Requirements and Performance Specifications, both of which are incorporated into the Contract.

SECURITY: Association: CONFIDENTIAL Work: UNCLASSIFIED

TOTALS CARRIED FORWARD TO FIRST SHEET

PROGRESS PAYMENTS

Progress payments shall be made to the Contractor as work progresses, from time to time upon request, in amounts approved by the Contracting Officer upon the following terms and conditions:

(a) Computation of Amounts

(1) Unless a smaller amount is requested, each progress payment shall be (i) ~~70~~ percent of the amount of the Contractor's total costs incurred under this contract plus (ii) to the extent if any provided in the Schedule, the amount of the progress payments made by the Contractor to its subcontractors and remaining unliquidated; all less the sum of previous progress payments.

(2) The Contractor's total costs shall be reasonable, allocable to this contract, and consistent with sound and generally accepted accounting principles and practice. However, such costs shall not include (i) any costs incurred by subcontractors or suppliers, or (ii) any payments or amounts payable to subcontractors or suppliers, except for completed work (including partial deliveries) to which the contractor has acquired title and except for amounts paid or payable under cost-reimbursement or time and material subcontracts for work to which the Contractor has acquired title, or (iii) costs ordinarily capitalized and subject to depreciation or amortization except for the properly depreciated or amortized portion of such costs.

(3) The amount of unliquidated progress payments shall not exceed the less of (i) ~~70~~ percent of the costs mentioned in (a) (1) (i) above, plus any unliquidated progress payments mentioned in item (a) (1) (ii) above, both of which are applicable only to the supplies and services not yet delivered and invoiced to and accepted by the Government, or, (ii) ~~70~~ percent of the total contract price of supplies and services not yet delivered and accepted by the Government, less unliquidated advance payments.

(4) The aggregate amount of progress payments made shall not exceed ~~70~~ percent of the total contract price.

(5) If at any time a progress payment of the unliquidated progress payments exceed the amount permitted by this paragraph (a), the Contractor shall pay the amount of such excess to the Government upon demand.

(b) Liquidation

Except as provided in the clause entitled "Termination For Convenience of the Government," all progress payments shall be liquidated by deducting from any payment under this contract other than advance or progress, the amount of unliquidated progress payments, or ~~70~~ percent of the gross amount invoiced, whichever is less. Repayment to the Government required by a retroactive price reduction will be made after recalculating liquidations and payments on past invoices at the reduced prices and adjusting the unliquidated progress payments accordingly.

(c) Reduction or Suspension

The Contracting Officer may reduce or suspend progress payments, or liquidate them at a rate higher than the percentage stated in (b) above, or both, whenever he finds upon substantial evidence that the Contractor (i) has failed to comply with any material requirement of this contract, (ii) has so failed to make progress, or is in such unsatisfactory financial condition, as to endanger performance of this contract, (iii) has allocated inventory to this contract substantially exceeding reasonable requirements, (iv) is delinquent in payment of the costs of performance of this contract in the ordinary course of business, (v) has so failed to make progress that the unliquidated progress payments exceed the fair value of the work accomplished on the undelivered portion of this contract, or (vi) is realizing less profit than the estimated profit used for establishing a liquidation percentage in paragraph (b), if that liquidation percentage is less than the percentage stated in paragraph (a) (1).

(d) Title

When any progress payment is made under this contract, title to all parts; materials; inventories; work in process; special tooling as defined in clause of this contract entitled "Special Tooling"; nondurable (i.e., non capital) tools, jigs, dies, fixtures, molds, patterns, taps, gauges, test equipment, and other similar manufacturing aids not included within the definition of special tooling in such "Special Tooling" clause; and drawings and technical data (to the extent delivery thereof to the Government is required by other provisions of this contract); theretofore acquired or produced by the Contractor and allocated or properly chargeable to this contract under sound and generally accepted accounting principles and practices shall forthwith vest in the Government; and title to all like property thereafter acquired or produced by the Contractor and allocated or properly chargeable to this contract as aforesaid shall forthwith vest in the Government upon said acquisition, production, or allocation. Notwithstanding that title to property is in the Government through the operation of this clause, the handling and disposition of such property shall be determined by the applicable provisions of this contract such as; the Default clause and paragraph (h) of this clause; Termination for Convenience of the Government clause; and Special Tooling Clause. Current production scrap may be sold by the Contractor without approval of the Contracting Officer and the proceeds shall be credited against the costs of contract performance. With the consent of the Contracting Officer and on terms approved by him, the Contractor may acquire or dispose of property to which title is vested in the Government pursuant to this clause, and in that event the costs allocable to the property or be transferred from this contract shall be eliminated from the costs of contract performance and the Contractor shall repay to the Government (by cash or credit memorandum) an amount equal to the unliquidated progress payments allocable to the property so transferred. Upon completion of performance of all the obligations of the Contractor under this contract, including liquidation of all progress payments hereunder, title to all property (or the proceeds thereof) which had not been delivered to and accepted by the Government under this contract or which had not been incorporated in supplies delivered to and accepted by the Government under this contract and to which title has vested in the Government under this clause shall vest in the Contractor. The provisions of this contract referring to or defining liability for Government-furnished property shall not apply to property to which the Government shall have acquired title solely by virtue of the provisions of this clause.

(e) Risk of Loss

Except to the extent that the Government shall have otherwise expressly assumed the risk of loss of property, title to which vests in the Government pursuant to this clause, in the event of the loss, theft, or destruction of or damage to any such property before its delivery to and acceptance by the Government, the Contractor shall bear the risk of loss and shall repay the Government an amount equal to the unliquidated progress payments based on costs allocable to such lost, stolen, destroyed or damaged property.

(f) Control of Costs and Property

The Contractor shall maintain an accounting system and controls adequate for the proper administration of this clause.

(g) Reports - Access to Records

Insofar as pertinent to the administration of this clause, the Contractor will (i) furnish promptly such relevant reports, certificates, financial statements, and other information as may be reasonably requested by the Contracting Officer and (ii) give the Government reasonable opportunity to examine and verify its books, records, and accounts.

(h) Special Provisions Regarding Default

If this contract is terminated pursuant to the clause entitled "Default", (i) the Contractor shall, upon demand, pay to the Government the amount of unliquidated progress payments and (ii) with respect to all property as to which the Government elects not to require delivery under the clause entitled "Default", title shall vest in the Contractor upon full liquidation of progress payments, and the Government shall be liable for no payment except as provided by the "Default" clause.

(i) Reservations of Rights

The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract. No payment, or vesting of title pursuant to this clause, shall excuse the Contractor from performance of its obligations under this contract, nor constitute a waiver of any of the rights and remedies of the parties under this contract. No delay or failure of the Government in exercising any right, power or privilege under this clause shall affect any such right, power or privilege, nor shall any single or partial exercise thereof preclude or impair any further exercise thereof or the exercise of any other right, power or privilege of the Government.

22 May 1967

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TECHNICAL REQUIREMENTS AND PERFORMANCE SPECIFICATIONS
FOR REAR PROJECTION VIEWER NOD-120

110
[Signature]

1. INTRODUCTION

This paper describes the specifications and requirements to be met in the fabrication of an advanced rear projection viewer.

2. CONCEPT

2.1 Purpose - This instrument will allow the photo interpreter to obtain more information than is now possible with existing rear projection viewers and will also provide more flexibility in the overall scanning operation.

2.2 Scope - The scope of this contract will be the design and fabrication of an operational, advanced rear projection viewer.

3. REQUIREMENTS

3.1 General Configuration -

3.1.1 Overall width of any one section of the viewer shall not exceed 34-1/2 inches, which will facilitate movement through a 36-inch office door. The overall height shall not exceed 78 inches. The depth shall be no greater than 88 inches. Maximum time for preparing the instrument for movement through doors shall not exceed 15 minutes.

3.1.2 The center of the viewing screen shall be 55.5 inches from the floor.

3.1.3 The viewer will be configured to allow two or more interpreters to view the screen at the same time.

3.2 Optical System -

3.2.1 Quality -

3.2.1.1 The prime objective of this contract is to provide a practical viewer having the optical quality exhibited in Figure 1. The on axis resolution specifications are 10 lp/mm/magnification power @ 3X decreasing linearly to 6 lp/mm/magnification power @ 70X using a high contrast resolution target. There shall be no greater than a 20% degradation of resolution within 15 inches of the screen's axis. These values are to be read on the viewing side of the screen.

3.2.1.2 The optical system is to be so designed that when the image is in sharp focus there will be no apparent color fringing on the screen when the screen is inspected with a 10X magnifier. When a calibrated grid is projected; geometric distortion of the images at the screen shall not exceed two percent across the screen.

3.2.2 Magnification - The system shall provide continuous magnification with a minimum magnification of 3X and a maximum of 70X. If two optical systems are used they must be par focused so that when changed, the images will remain in focus. The time required to change from one magnification range to the other will be less than five seconds.

3.2.3 Screen -

3.2.3.1 The size of the screen shall be 30 inches square.

3.2.3.2 Unless otherwise directed by the Contracting Officer, a Polacoat LS-60 screen shall be used.

3.2.4 Illumination -

3.2.4.1 Screen Brightness - The screen brightness, as viewed from the position of the observer, will have a minimum acceptable luminance of 20 ft. lamberts at any magnification. This luminance will be measured with a silver halide film of fogged density 1.5 filling the film plane, or an open gate screen brightness of 630 ft. lamberts. The screen will be evenly illuminated and at no point will the illumination deviate by more than 10% of the maximum value. This brightness requirement will not be obtained 1-1/4 inches on the corners of the film decreasing linearly and disappearing at 3.7X when viewing 9-1/2 inch film. It is required that the light intensity be continuously variable from 100% to 50% of the above values. The color temperature of the illumination shall never fall below 3400°K. The brightness of the original light source shall not diminish by more than 10% during the first 1000 hours of operation.

3.2.4.2 Cooling - Adequate cooling of the light source shall be provided to minimize premature burnout (as defined in 3.2.4.1) and other glass breakage due to heat. Maximum acceptable film temperature in the film gate is 100°F when used in an ambient room temperature of 80° or below. Temperature tests will be made with silver halide film, in a static state, with a fogged density of 1.5, completely filling the entire gate, with the light source burning continuously at maximum brightness for three hours.

3.2.5 Focus - The instrument will maintain maximum film flatness in both static and dynamic modes. In the static condition, the entire projected image will remain in sharp focus regardless of magnification. When the film is transported there will be no apparent focal shift of the projected image during the transport mode. The projected image shall remain in sharp focus at all points on the screen; any focus compensation required shall be faster than the normal perception of the human eye.

3.2.6 Image Rotation - Image rotation through 360° shall be provided. This should be easily controlled from the instrument panel.

3.3 Film Transport System -

3.3.1 Film transport shall be provided to accommodate various widths of roll film ranging from 1000 foot rolls of 70mm to 500 foot rolls of 9-1/2 inch material of standard film thickness. However, the transport should be so designed to permit use of thin base material. A wide variety of film spools may be used; however, they shall generally conform to Air Force specifications. The viewer should accommodate any size between 70mm and 9.5 inches, inclusive.

3.3.1.1 Design of the transport shall insure safe handling of film, both standard and this base, at all speed, i.e., no stretching, rearing, frilling edges, scratching, etc. can be tolerated.

3.3.1.2 Two film drive speed ranges are to be provided.

3.3.1.2.1 High speed, rapid, advance/rewind. The maximum speed will be dictated by safe film handling practices, but should have a range of at least 0.9 to 40 inches/second parallel to the film and 0.05 to 2.0 inches/second transverse to the film. Sufficient control of the braking system shall be maintained to insure smooth stop motion when the variable control is returned to the stop position.

3.3.1.2.2 A variable scan speed will provide suitable viewing speed at all magnifications. Film speed is to be variable at a ratio of at least 1000:1 or 0.002 to 2.0 inches/second and must be smooth at all speeds. The speed range shall vary from just barely moving on the screen at 70X to the fastest at which an operator can adequately view the film. The ranges of speed must be consistent with the ranges of magnification. Smooth image movement is interpreted to mean there shall be no noticeable jerking or sporadic movement of the projected image detectable by the unaided eye.

3.3.2 Image positioning controls shall be provided which allow the operator to bring any portion of the film frame into view at the center of the projection screen. The mid-point of all the various film widths will always be positioned at the mid-point of the film projection gate. Pushbutton controls shall be provided to automatically center the projection system over the mid-point of the film. Another pushbutton control shall provide automatic image rotation to a reference position. The joystick motion control shall be extremely sensitive -- the film speed will not vary when the joystick is maintained at a constant deflection. The null position shall be positive and limited in range. The joystick control assembly shall be removable from the viewer to permit the operator to control the image motion at a distance up to 4 feet away from the viewer.

3.3.3 Film transport control logic shall interlock the film transport operations so that it will be impossible for an operator to damage film by improper sequencing of the film transport controls.

3.3.4 The film gate and transport system shall be so constructed to prevent any damage to the film either in the static or dynamic mode. No scratches will be evident on an unexposed/developed 500 foot spool of 9.5 inch film after it has been transported through the film gate ten times.

3.3.5 The operation of the film transport should be from a single joystick type control to allow forward or reverse translation of the film using this control. The direction of deflection of the joystick will correspond directly to the motion of the image across the screen, regardless of the degree of image rotation involved.

3.3.6 The ease of loading the film will be of extreme importance in this instrument. Rapid, positive loading and easy access to load are mandatory. The time required for an experienced operator to complete the entire film loading operation will be no greater than 20 seconds (film preparation excluded). The system will be fabricated to allow the operator to simply load the film spool in the transport, which is automatically positioned to the front and fully exposed when the front door is opened, and attaches the end of the film to a leader which then carries it through the projection platen and onto the take-up spool. No additional operations will be required after this step and the film is now loaded for viewing. The take-up spool will be a special design; whereby, no adjustment will be required to accommodate various film sizes. The removal of the take-up spool will not be required.

3.3.7 The film aperture shall measure no less than 9-1/2" x 9-1/2" and shall hold the film flat while viewing. The entire width of 9.5 inch wide film will be projected. The platen shall be designed to accommodate sizes from 70mm to 9-1/2" film of various thicknesses. On transport scanning and film slew positions, the film gate shall be designed to prevent the film from coming in contact with the platen. Adequate control shall be exercised to maintain the entire projected image automatically in sharp focus in either the scanning or static mode as described in 3.2.5.

3.3.8 A mensuration system will enable the operator to measure film distances in one millimeter increments in both the "X" and "Y" axis. Maximum "X" axis measurement (parallel to the film length) will be 40 inches and "Y" axis will be 9.5 inches.

3.4 Construction -

3.4.1 Electrical -

3.4.1.1 All electrical and electronic parts will be of the heavy duty, maximum reliability type. Indicatory lamps shall be provided for each fuse holder and relay, and the fuse holder shall be marked to indicate the correct amperage.

3.4.1.2 A chassis and cabinet grounding wire shall be included in the AC line cord. The chassis grounding wire shall be connected to all major electrical sub-assemblies within the cabinet so as not to rely upon the cabinet itself as a conductor. All electrical parts shall be attached to the chassis so as to insure a positive ground (eliminating any effects from paint and anodizing).

3.4.1.3 To expedite maintenance, an electrical circuit diagram shall be permanently attached to the inside of one of the cabinet covers.

3.4.1.4 The viewer shall be designed to operate on a production line basis. Therefore, it shall feature top reliability and maintainability, even though operated by semi-trained personnel on a 16-hour, 6-day week schedule - relatively trouble free performance is mandatory. All circuits will be designed to be fail-safe, properly fused and dust covers or sealed components used when required.

3.4.1.5 All circuitry is to be designed so that intermittent variations of up to 15% of the line voltage will not materially affect the operation of the instrument.

3.4.1.6 The xenon arc lamp shall be adequately enclosed to completely protect the operator from possible explosion of the lamp.

3.4.2 Mechanical -

3.4.2.1 The cabinet, film transport and optical element shall be of sufficient rigidity to insure that moving the machine within a building (through elevators, etc.) will not affect the optical alignment and degrade the quality of the projected image.

3.4.2.2 The structural rigidity of the viewer shall be sufficient to insure that light taps on the control panel or other sections of the cabinet will not introduce any vibration or image jump visible on the screen, as viewed with the unaided eye at maximum magnification.

3.4.2.3 The viewers shall be equipped with 5" diameter casters for easy relocation within an office building. In addition, leveling jacks shall be provided for permanent installation purposes.

3.4.2.4 Projections and overhanging edges which would injure operator or maintenance personnel shall be reduced or eliminated where possible. All edges and corners of the cabinet should be rounded.

3.4.2.5 Special considerations shall be given to design for ease of maintenance. Access doors, panels, or covers must be provided for easy access to parts requiring periodic access.

3.4.2.6 All operating controls shall be conveniently located within the reach of a comfortably seated operator. Controls shall be grouped by function and suitably identified. Operation of controls shall follow established conventions, such as clockwise for increase, etc.

3.4.2.7 All hardware (screws, bolts, etc.) should be of American Standard sizes with a minimum of types and sizes used. If any special tools are required for disassembly or assembly, one each shall be furnished with each machine. Sheet metal or self-tapping screws are not to be used.

3.4.2.8 All surfaces shall be of a corrosion-resistant type or are to be suitably treated for protection against corrosion. Special consideration is to be given to weld joints for corrosion resistance. Painted surfaces shall be protected with suitable undercoating before application of finish coats. The entire interior of the cabinet exposed to the light path (other than lenses and mirrors) shall be coated with a non-reflecting, black coating to the extent that no reflected light shall enter the optical system.

3.4.2.9 Parts requiring lubrication shall be easily accessible and oil holes and grease fittings shall be provided. Wherever possible, sealed bearings of the pre-lubricated type are to be used.

3.4.2.10 Where reflective optics are utilized within the system they should be mounted on three point suspension systems for ease of alignment. Care shall be taken to prevent losses of resolution due to vibration in the mirror system.

3.4.2.11 Thorough attention to human engineering features and ease of operation is mandatory.

3.4.2.12 The viewer, auxiliary equipment and support equipment shall be built to best commercial standards, except optical quality which shall be built to standards as defined in MIL-STD-150-A. Due consideration must be given to the requirement for operation and maintenance by semi-skilled personnel. Final acceptance tests shall be performed at the final destination as specified by the Contracting Officer.

3.5 Miscellaneous -

3.5.1 A complete testing procedure shall be submitted for the Contracting Officer's approval prior to beginning construction of the instrument.

3.5.2 A kit of initial spare parts and maintenance materials shall be delivered with each viewer. Items to be included but not necessarily restricted to are:

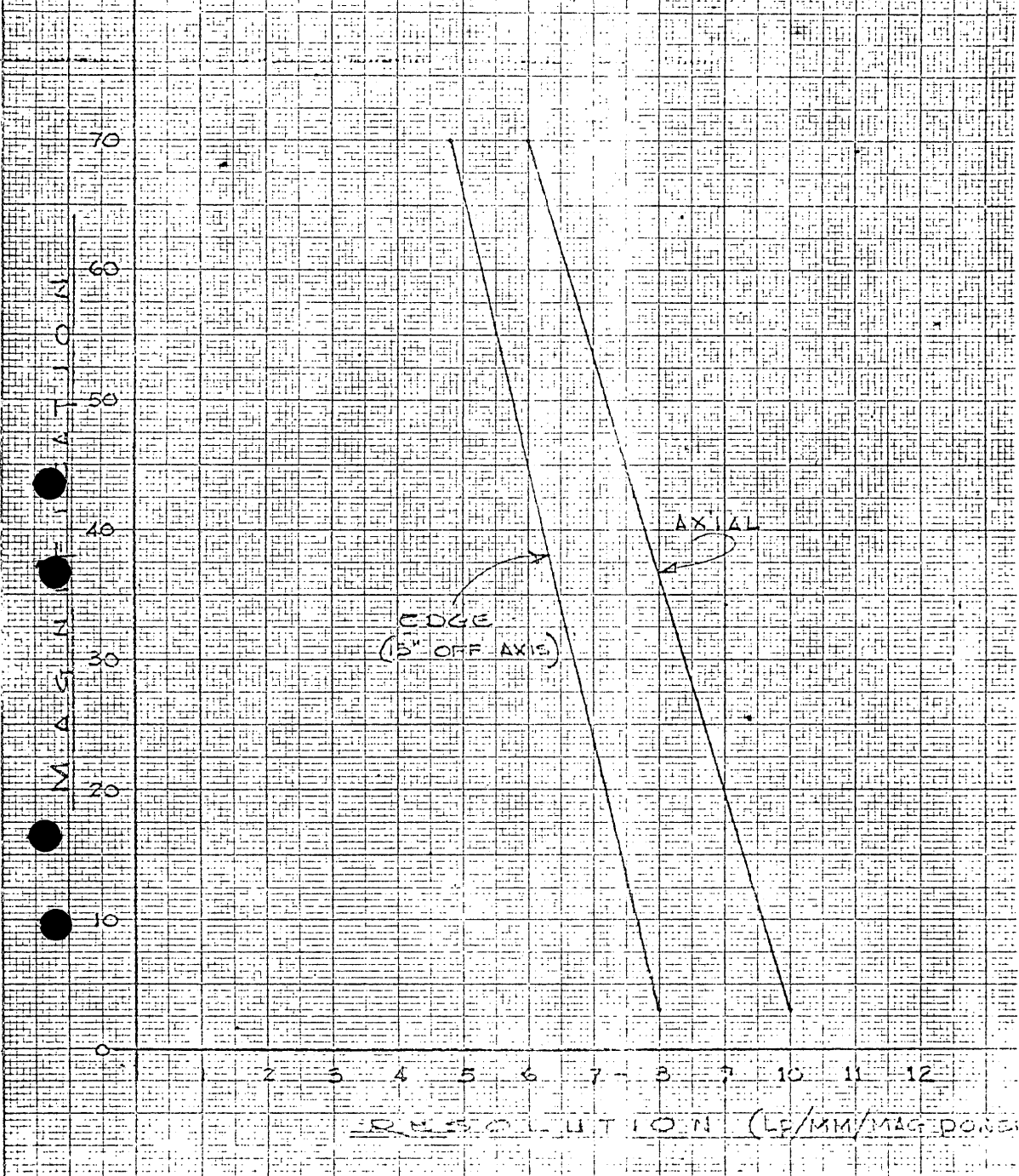
- 3.5.2.1 4 each projection lamps
- 3.5.2.2 2 each platen assemblies
- 3.5.2.3 5 each fuses (of each type used)
- 3.5.2.4 1 can of touch-up paint
- 3.5.2.5 Recommended 6-month operating spare parts list

3.5.3 An operator's instruction book and a comprehensive technician's maintenance book are to be delivered with each instrument. Instruction books will be written to good commercial practice and contain a minimum of cross references.

3.5.4 Testing will be progressive throughout the fabrication. Periodic inspections will be performed at the Contractor's plant by the Contracting Officer's technical representative. A preliminary acceptance test is to be performed at the Contractor's plant prior to shipping. Final acceptance testing will be performed after delivery and installation of the viewer at the Customer's facility.

Installation shall consist of a complete mechanical and electrical checkout and optical alignment to insure that the viewer is operating in peak condition prior to acceptance tests.

FIGURE 1 RESOLUTION SPECIFICATION



REQUEST TO PROCUREMENT DIVISION FOR SERVICES
(other than property or building maintenance and repairs)

INSTRUCTIONS: (1) As appropriate, refer to Contract, Task Order, Proposal Number, and attach any proposals, specifications or justifications. Obtain hereon or attach evidence of R & D approval as required by OLCI Memo of 23 December 1963, ER 63-8811. (2) Obtain Technical Officer approval or concurrence as appropriate. (3) Include in the narrative portion amplification of particular security requirements and any delivery or consignee instructions.

REQUEST NO. 55-6630-67	DATE OF REQUEST 19 Dec 66	PROCUREMENT DIV. ASSIGNMENT 954 <i>efc</i>	DATE RECD IN PD. 12-16-66
TYPE OF SERVICE REQUESTED			
RESEARCH/DEV. (1) (2) (3)	OTHER-SPECIFY (2) (3)		
GRANT (1) (2) (3)			
REPAIR (3)			
MAINTENANCE (3)			
MODIFICATION (1) (2) (3)			
STERILITY CODE			
REPAIR OR MAINTENANCE SERVICE HAS BEEN SATISFACTORILY COMPLETED		SIGNATURE	DATE

MATERIAL LOCATED OR SERVICES TO BE PERFORMED AT

NARRATIVE DESCRIPTION OF SERVICES REQUESTED

Advanced Rear Projection Viewer in accordance with
Proposal 65-134 dated December 1965, copy attached.



Approved by Ex. Dir-Comptroller, 16 December 1966, Copy attached.

☐ UNCLASSIFIED☒ CONFIDENTIAL ☐ SECRET

(specify)

REQUEST TO PROCUREMENT DIVISION FOR SERVICES

(other than property or building maintenance and repairs)

INSTRUCTIONS: (1) As appropriate, refer to Contract, Task Order, Proposal Numbers and attach any proposals, specifications or justifications. Obtain hereon or attach evidence of R & D approval as required by DDCI Memo of 23 December 1963, ER 63-2811. (2) Obtain Technical Officer approval or concurrence as appropriate. (3) Include in the narrative portion amplification of particular security requirements and any delivery or assignment instructions.

REQUEST NO. 5 2630-07 (A-1)	DATE OF REQUEST 5 April 1967	DATE RECD IN PD. 4/13/67
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TYPE OF SERVICE REQUESTED

 REQUESTED BY OFFICE
 NPIC

RESEARCH/DEV. (1) (2) (3)

OTHER-SPECIFY (2) (3)

GRANT (1) (2) (3)

REPAIR

MAINTENANCE (3)

MODIFICATION (1) (2) (3)

PRIORITY CODE

 REPAIR OR MAINTENANCE SERVICE HAS
 BEEN SATISFACTORILY COMPLETED

SIGNATURE

DATE

MATERIAL LOCATED OR SERVICES TO BE PERFORMED AT

NARRATIVE DESCRIPTION OF SERVICES REQUESTED

Increase funding by to cover ~~xxxxxxx~~ increased rates approved during the negotiation period for one advanced Rear Projection Viewer.

Approved by D/NPIC on 4 April 1967